Experiment 4: Anchoring experiment of the RTBfood TRICOT Experiment

Over the years, improved cassava varieties have been developed for farmers and other agricultural industries but there is poor adoption of many of these varieties (Steinke and Van Etten 2016). Early research focused on the development of high-yield and disease-resistant varieties (Evenson and Gollin, 2003). Consumers, on the other hand, prefer varieties that will give good quality of the final product and this varies based on the manner of consumption and regional preference (Forsythe et al, 2020). Sometimes, varieties that do well on the research station may not work well on a small farm managed by the farmer (Steinke and Van Etten, 2016). These are some of the reasons why these varieties are not adopted. To address this issue, breeding programs are now becoming more demand-driven. With TRICOT (triadic comparison of technologies) crop varieties or other agricultural technologies can be distributed to individual farmers in combinations of three, these varieties are observed and evaluated on-farm, and their performances compared (Van Etten et al, 2019). TRICOT is easy to understand and farmers with low levels of education can participate. Ranking the varieties makes TRICOT less complicated (Van Etten et al., 2019).

TRICOT Anchoring experiment

The objective of this experiment is to compare farmer-managed fields with on-station-managed fields. To see if varieties perform differently or are assessed differently on the farmer’s field. 30 farmers will be given 3 cassava varieties to grow on their fields. The varieties will be evaluated at different time points. At harvest, numeric data on the yield traits will be collected along with rating the agronomic, disease, and NIRS evaluation. While the farmers will rank these traits from best to worst. The tubers will be processed into garri and eba and the quality ranked from best to worst. Finally, the farmers will give an overall rating of the variety on a scale of 1-5 based on all the traits evaluated in this experiment.

The objective of this experiment is to compare farmers handled fields with on-station fields managed by research personnel.

Materials and methods

Fifteen percent (15%) of the total TRICOT experiment of 300 farmers (thus, 30 farmers) will be given 3 cassava varieties to grow on theirfieldsd at different. The varieties will be evaluated at 1, 3, 6, 9, and 12 months after planting. They will rate the plants from best to worse for the agronomic such as plant height, vigor, architecture, and disease traits. At harvesting, numeric data on the yield traits, plant height, disease incidence, and severity scores, and architecture. The tubers will be processed into garri and eba. These will be ranked from best to worst. Finally, the farmers will give a general rating of the variety on a 1-5 rating. This rating will be on the overall value (that is, the agronomic, the disease, and the garri/eba quality). Numeric data on the processing traits such as fermentation time, peeling time, roasting time, the weight of mash after dewatering, and weight of garri would also be collected. Fresh tubers and garri samples will be collected for the farmer’s fields. These will be scanned using NIRS and physiochemical characterization of these samples will be done in the NRCRI research laboratory. The fresh tubers will be evaluated, for dry matter, starch, crude fiber, sugars, and cyanide. The garri will be analyzed for, water holding capacity, swelling, bulk density, sugar, starch, and cyanide content.